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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/581,832

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EXAMINER

LEGASSE JR, FRANCIS M

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/581,832	Applicant(s) RICHARD, MATTHIEU	
	Examiner FRANCIS M. LEGASSE JR	Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5 June 2006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Title

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Abstract

The abstract of the disclosure is objected to because of the reference to figure 4 on line 20. Correction is required. See MPEP § 608.01(b).

Claim Objections

Claim 10 is objected to because it recites the limitation "that the second elevations" in lines 1 and 2. There is insufficient antecedent basis for this limitation in the claim. Applicant failed to properly amend this claim to depend from dependent claim 5. For examination purposes the examiner will treat this claim as being dependent from claim 5.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 7, Applicant recites the phrases, "a diameter of the first facet is smaller than 5 mm, preferably smaller than 1mm." It is unclear how the first facet can have a diameter when it is clearly a flat reflective face (fig. 4, element 110). The

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examiner is unclear to the interpretation Applicant is intending. Therefore, the examiner is unable to properly search this limitation with respect to prior.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Maeda (US Patent No. 6,626,510 B2).

Regarding claim 1, Maeda (*figures 9 and 10*) discloses a sensor arrangement for detecting a liquid on a surface, the sensor arrangement comprising:

- at least one transparent elevation (180) formed on the surface (700B), wherein the transparent elevation (180) is made of a first transparent material, and at least one first facet of the transparent elevation (180) is defining a first angle with the surface (700B);
- a light source (1001) arranged for emitting an incident ray (A) into a first direction such that the incident ray (A) passes through the surface (700B) into the transparent elevation (180), such that in presence of a liquid (709) at the first facet an incident ray will be transmitted through the first facet, wherein in absence of a liquid (709) the incident ray will be reflected due to a total reflection at the first facets (col. 10, lines 49-67);
- a light detector (102) for detecting the reflected incident ray (B, C).

Regarding claim 2, Maeda (*figures 9 and 10*) discloses a sensor arrangement for detecting a liquid on a surface, the sensor arrangement characterized in that the first angle is larger than an angle at which a total reflection occurs at an interface of the first transparent material and air and smaller than an angle at which a total reflection occurs at an interface of the first transparent material and the liquid (706).

Regarding claim 4, Maeda (*figures 9 and 10*) discloses a sensor arrangement for detecting a liquid on a surface, the sensor arrangement characterized in that the elevation (180) is formed with a triangular cross-section.

Regarding claim 8, Maeda (*figures 9 and 10*) discloses a sensor arrangement for detecting a liquid on a surface, the sensor arrangement characterized in that an angle defined by two adjacent first facets (peak of triangle) of at least one elevation is different to 90°.

Regarding claim 9, Maeda (*figures 9 and 10*) discloses a sensor arrangement for detecting a liquid on a surface, the sensor arrangement characterized in that first direction (B') is substantially perpendicular to the surface (700B).

Claims 1, 5, 6 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Altfather et al. (US Patent No. 5,997,121, "Altfather", hereinafter).

Regarding claim 1, Altfather (*figures 2, 5A and 5B*) discloses a sensor arrangement for detecting a liquid on a surface, the sensor arrangement comprising:

- at least one transparent elevation (21) formed on the surface (17A), wherein the transparent elevation (21) is made of a first transparent material, and at

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- least one first facet (21A) of the transparent elevation (21) is defining a first angle with the surface (17A);
- a light source (34) arranged for emitting an incident ray into a first direction such that the incident ray (A) passes through the surface (17A) into the transparent elevation (21), such that in presence of a liquid (lnk) at the first facet an incident ray will be transmitted through the first facet (21A), wherein in absence of a liquid (lnk) the incident ray will be reflected due to a total reflection at the first facets (21A and 21B);
 - a light detector (38) for detecting the reflected incident ray.

Regarding claim 5, Altfather (*figures 2, 5A and 5B*) discloses a sensor arrangement for detecting a liquid on a surface, characterized in that at least one second elevation (22) having a second facet (22A) formed adjacent to a first facet (21B) of a first elevation (21) wherein the second facet (22B) defines a second angle with the surface (17A), wherein the second angle is larger than 75° , such that capillary effects are enhanced.

Regarding claim 6, Altfather (*figures 2, 5A and 5B*) discloses a sensor arrangement for detecting a liquid on a surface, characterized in that the second transparent material (polypropylene) has a refractive index of more than about 1.5 and the first angle is in the range of 42° to 60° .

Regarding claim 10, Altfather (*figures 2, 5A and 5B*) discloses a sensor arrangement for detecting a liquid on a surface, characterized in that the second elevations (22) are provided with a top facet being substantially parallel to the surface

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(17A).

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Wieser et al. (US Patent No. 5,942,976, "Wieser", hereinafter).

Regarding claim 1, Wieser (*figures 1, 2A-2D and 4*) discloses a sensor arrangement for detecting a liquid on a surface, the sensor arrangement comprising:

- at least one transparent elevation (4) formed on the surface (3), wherein the transparent elevation (4) is made of a first transparent material, and at least one first facet of the transparent elevation (4) is defining a first angle with the surface (3);
- a light source (8) arranged for emitting an incident ray into a first direction such that the incident ray passes through the surface (3) into the transparent elevation (4), such that in presence of a liquid (spray adhesive) at the first facet an incident ray will be transmitted through the first facet, wherein in absence of a liquid (spray adhesive) the incident ray will be reflected due to a total reflection at the first facets (col. 4, lines 49-59);
- a light detector (9) for detecting the reflected incident ray.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda.

Regarding claim 3, Maeda (*figures 9 and 10*) discloses a sensor arrangement for detecting a liquid on a surface, the sensor arrangement characterized in that the elevation (180) is formed with a triangular cross-section but fails to teach an elevation that has a tetrahedron shape and three first facets.

It is common knowledge in the art to use any particular shape that will be able to provide a total internal reflection when air is present.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a tetrahedron shape for the elevation because it will provide alternative shapes and arrangements to ensure that the liquid will be properly sensed.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wieser in view of Tomooka (US Patent No. 6,469,625 B1).

Regarding claim 11, Wieser (*figures 1, 2A-2D and 4*) discloses a sensor arrangement for detecting a liquid on a surface, the sensor arrangement comprising a light detector (9) and a light source (8) but fails to teach a second light detector is provided for detecting a ray reflected at an object placed in front of the elevations.

Tomooka (*figures 2A and 3*) discloses a sensor arrangement comprising a second light detector (12A) is provided for detecting a ray reflected at an object (8) placed in front of the elevations (6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the second light detector of Tomooka in combination with

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the arrangement of Wieser because it will provided an increase in the sensor detecting tampering means such as a liquid or an object, thus increasing the overall accuracy and reliability of the device.

Regarding claim 12, Wieser (*figures 1, 2A-2D and 4*) discloses a sensor arrangement for detecting a liquid on a surface, the sensor arrangement comprising a light detector (9) and a light source (8) but fails to teach a that the light source and/or light detector comprises a waveguide.

Tomooka (*figure 3*) discloses a sensor arrangement comprising a light detector (12) comprising a waveguide (9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the waveguide of Tomooka in combination with the arrangement of Wieser because it will provide alternative configurations and also ensure that the reflected beams are being properly focused onto the detector.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Francis M. LeGasse Jr whose telephone number is (571) 272-9798. The examiner can normally be reached on Monday through Thursday 7:00 am to 5:30 pm E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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